

What is claimed is:

Sub A1

1. A method for grouping at least two diverse operations, comprising the steps of:
initiating a context grouping the operations, wherein the group is one of at least two messaging operations, and at least one messaging operation and at least one transactional operation;
5 performing the operations within the context, each operation resulting in an outcome; combining the outcomes; determining an overall outcome based on a combination of the outcomes for each operation; and
0 taking at least one action dependent on the overall outcome.

2. The method of claim 1, further comprising the step of terminating the context upon taking the action.

3. The method of claim 1, wherein each operation is supported by an object.

4. The method of claim 1, wherein the outcome of each messaging operation is independent of other messaging operation outcomes.

20 5. The method of claim 1, wherein the outcome of a messaging operation is independent of a transactional operation outcome.

6. The method of claim 1, wherein an operation is one of a synchronous invocation on a transactional resource and a conditional asynchronous message between at least two messaging components.

5 7. The method of claim 6, wherein the synchronous invocation occurs in at least one transaction.

8. The method of claim 6, wherein the asynchronous message results in an outcome, the outcome defined by a condition associated to a corresponding operation.

0 9. The method of claim 6, further comprising the step of grouping the synchronous invocation in the transaction and the conditional asynchronous message.

5 10. The method of claim 1, further comprising the step of interpreting each outcome as one of a success and a failure.

11. The method of claim 1, further comprising the step of interpreting the overall group outcome as one of a success and a failure.

20 12. The method of claim 11, further comprising the step of evaluating the overall group outcome as a failure if at least one individual operation is interpreted as a failure.

13. The method of claim 1, wherein the action is one of a predefined action, an automatically invoked action, and a performed action.

14. The method of claim 1, wherein the action taken upon determining the overall outcome
5 to be a failure further comprises the step of undoing an operation.

15. The method of claim 1, wherein the action taken upon determining the overall outcome
to be a failure further comprises the step of compensating for an operation.

10 16. A program storage device readable by machine, tangibly embodying a program of
instructions executable by the machine to perform method steps for grouping at least two diverse
operations within a software system, the method steps comprising:

initiating a context grouping the operations;
performing the operations within the context, each operation resulting in an outcome;
combining the outcomes;
determining an overall outcome based on a combination of the outcomes for each
operation; and
taking an action dependent on the overall outcome.

20 17. The method of claim 16, further comprising the step of terminating the context upon
taking the action.

18. The method of claim 16, wherein the step of initiating the group context further comprises the steps of:

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creating a representation of the context according to a defined data structure; and
filling the representation with values that identify the group context.

19. The method of claim 16, wherein each operation is supported by an object.

20. The method of claim 19, wherein the object is one of a transactional resource and a messaging component.

21. The method of claim 16, wherein an operation is one of a synchronous invocation on a transactional resource and an asynchronous message between two or more messaging components.

22. The method of claim 21, wherein the synchronous invocation occurs in at least one transaction.

23. The method of claim 21, wherein the asynchronous message results in an outcome, the outcome defined by a condition associated with a corresponding operation.

24. The method of claim 23, further comprising the step of grouping the synchronous invocation in the transaction and the conditional message.

25. The method of claim 16, further comprising the step of interpreting each outcome as one of a success and a failure.

26. The method of claim 16, further comprising the step of interpreting the overall group
5 outcome as one of a success and a failure.

27. The method of claim 26, further comprising the step of evaluating the overall group outcome as a failure if at least one individual operation is interpreted as a failure.

0 28. The method of claim 16, wherein the action is one of a predefined action, an automatically invoked action, and a performed action.

29. The method of claim 16, wherein the action taken upon determining the overall outcome to be a failure further comprises the step of undoing an operations.

5 30. The method of claim 16, wherein the action taken upon determining the overall outcome to be a failure further comprises the step of compensating for an operation.

20 31. The method of claim 16, wherein the outcome of each messaging operation is independent of other messaging operation outcomes.

32. The method of claim 16, wherein the outcome of a messaging operation is independent of a transactional operation outcome.

33. A method for managing a group of two or more operations within a software system, comprising the steps of:

initiating a group context including a sub-context for each operation in the group context, wherein each operation is supported by one of a transactional resource and a messaging

5 component;

performing the operations within the sub-contexts, each operation resulting in an outcome;

coupling the outcomes within the group context;

determining an overall outcome of the group context; and

taking at least one action dependent on the overall outcome.

10 34. The method of claim 33, further comprising the step of terminating the group context upon taking one or more actions.

15 35. The method of claim 33, wherein the step of initiating the group context further comprises the steps of:

creating a representation of the context according to a defined data structure; and

filling the representation with values that identify the group context.

20 36. The method of claim 33, wherein an operation is one of a synchronous invocation on a transactional resource, an asynchronous message between at least two messaging components, and a second group of at least two operations.

37. The method of claim 36, wherein the synchronous invocation occurs in at least one transaction.

38. The method of claim 36, wherein the asynchronous message results in an outcome, the 5 outcome defined by a condition associated to a corresponding operation.

39. The method of claim 36, further comprising the step of grouping the synchronous invocation on the transactional resource and a conditional asynchronous message.

40. The method of claim 33, further comprising the step of interpreting each outcome as one of a success and a failure.

41. The method of claim 33, further comprising the step of interpreting the overall group outcome as one of a success and a failure.

42. The method of claim 41, further comprising the step of evaluating the overall group outcome as a failure if at least one operation is interpreted as a failure.

43. The method of claim 33, wherein the action is one of a commit, a rollback, and a 20 compensation.

44. The method of claim 33, wherein the action is one of an update, a delete, a make-table, and an append.

45. The method of claim 33, wherein the action taken upon determining the overall outcome to be a failure further comprises the step of undoing the operations.

5 46. The method of claim 33, wherein the action taken upon determining the overall outcome to be a failure further comprises the step of compensating for the operations.

10 47. The method of claim 33, wherein managing the group includes one of achieving a defined property of the software system and preserving a defined property of the software system

48. The method of claim 33, wherein the outcome of each messaging operation is independent of other messaging operation outcomes.

15 49. The method of claim 33, wherein the outcome of a messaging operation is independent of a transactional operation outcome.